



NEWSLETTER OF THE LONDON CHAPTER,
ONTARIO ARCHAEOLOGICAL SOCIETY

c/o Museum of Ontario Archaeology
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This double issue of **KEWA** is the first issue for the current year (with luck we will be caught up by the end of the decade)!! It represents the second and final installment of the Magarth Site, the first of three sites pre-contact Iroquoian sites in the City of London excavated as part of the C.O.E.D. project.

Our Thursday, November 13 speaker will be **Dena Doroszenko** of the Ontario Heritage Trust. She will speak on "*Historic Archaeology on Ontario Heritage Trust Properties.*"

The meeting will be held at 8 pm at the Museum of Ontario Archaeology, 1600 Attawandaron Road, near the corner of Wonderland & Fanshawe Park Road, in the northwest part of the city.

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ANNUAL RATES

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SALVAGE ARCHAEOLOGY IN LONDON: THE C.O.E.D. PROJECT

PART 1: THE MAGRATH SITE, AN EARLY IROQUOIAN COMPONENT (CONTINUED)

DANA POULTON

Chipped Lithics

Chipped lithics comprise the most abundant cultural remains at the Magrath Site: 3008 individual pieces were found. Excluding a small sample of pre-Iroquoian diagnostics, these subsume seven functional categories in addition to cores and debitage. The predominance of debitage is reflected in the fact that these functional categories, together with the cores, total a mere 121 specimens, or 14.0% of the total Iroquoian chipped lithic sample.

The analyses that follow include all categories with the partial exception of the debitage: only 49.3% of the debitage was examined owing to pressures of time. Raw material identifications were determined visually for all specimens examined: the results are presented in Tables 5 and 8 for debitage and other categories, respectively. As Table 5 demonstrates, Kettle Point chert comprises the majority of formal and informal Iroquoian tools and cores (N-70, 57.9%), with a lesser incidence of Onondaga chert (N-22, 18.2%) and local pebble cherts (N-12, 9.9%). A small number of specimens (N-16, 13.2%) are of indeterminate chert consisting of pieces that were unidentifiable due to burning or to a lack of correspondence with other established chert types familiar to this analyst. Comparisons with Table 8 demonstrate that Kettle Point chert is even more prevalent at Magrath than its incidence among tools and cores would suggest: this one material comprises 99.1% of the debitage examined. The other three material categories represented in the sample of 1,470 pieces of debitage examined are barely present.

Table 5 Magrath Site; Frequency and Raw Materials of Analysed Chipped Lithic Categories*

Artifact Category	Chert Type					Total
	Kettle Point	Onondaga	Local Pebble	Indeterminate	Bayport	
Projectile Point	5	1	2	3		11
Drill	3					3
Strike-a-Light		1				1
Biface	3	2		5	1	11
Scraper	6	2	1	4		13
Utilized Flake	34	14	4	2		54
Pièces Esquillées	3	1		1		5
Core	16	1	5	1		23
Total	70	22	12	16	1	121
% of Total	57.9	18.2	9.9	13.2	0.8	100

* Excludes pre-Iroquoian bifaces.

Iroquoian Projectile Points

Eleven Iroquoian projectile points were recovered (Figure 12). The sample subsumes the following categories: triangular (N-5); side-notched (N-2); corner-removed (N-1); triangular reject (N-2); and tip fragment (N-1).

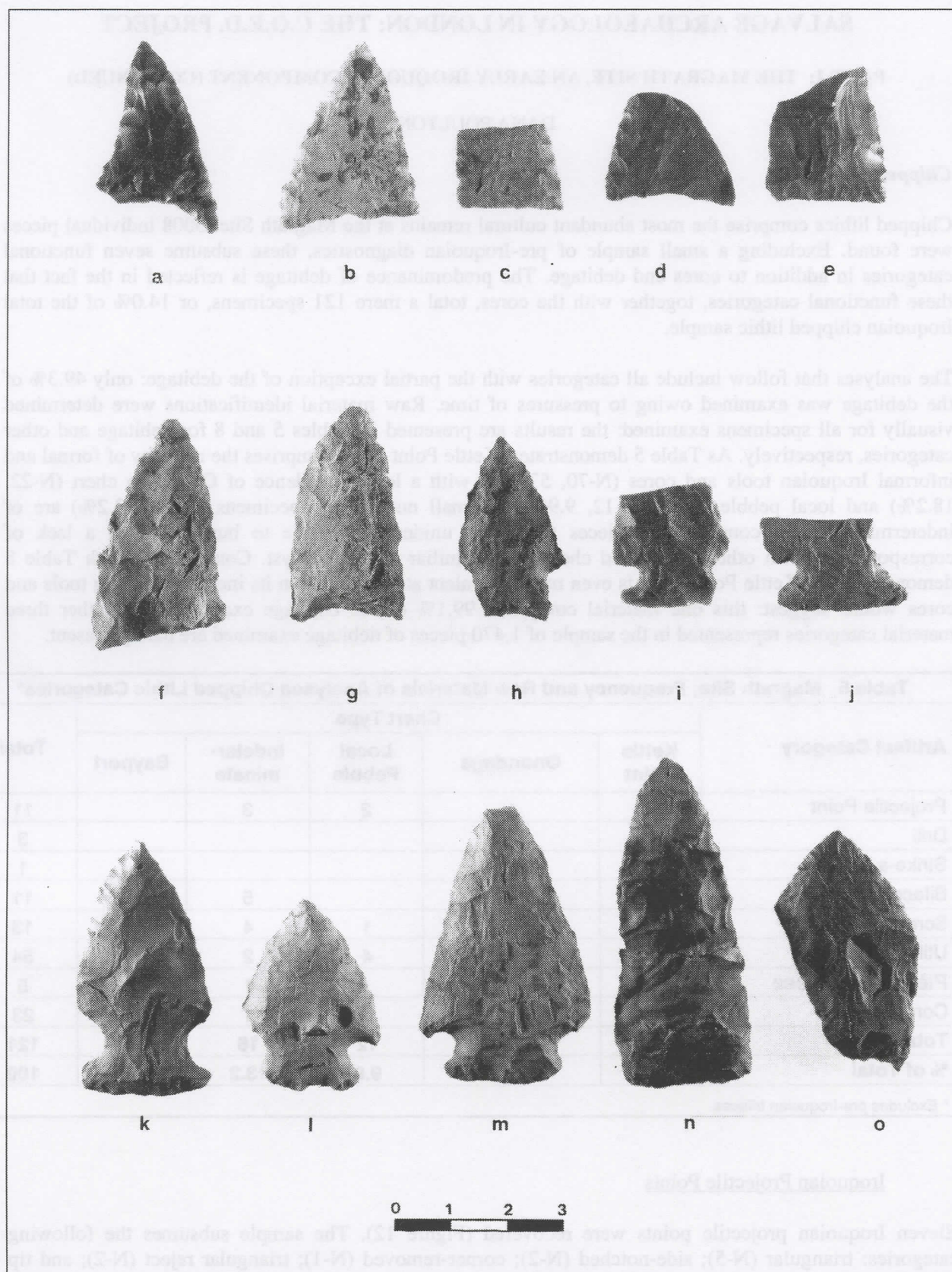


Figure 12 Magrath Site: Projectile Points and Pre-Iroquoian Bifaces

The triangular points comprise two complete specimens and three proximal fragments. One complete point and one fragment are of local pebble chert: the rest are of Kettle Point chert. Basal margins vary in configuration from straight (N-2) to concave (N-3). The lateral margins are generally straight to slightly convex, although one point (Figure 12 a) features one convex and one concave lateral margin. One of the two tangs on the latter specimen was broken during cataloguing and subsequently lost. Basal obliqueness is a feature of three of the four specimens for which this characteristic could be examined: the relevant points have basal margins that vary in configuration from straight to slightly concave to concave (Figure 12 c, b, a, respectively). Only on the latter point is basal obliqueness marked. Metrical data are as follows: length (N-2), 33-34mm (x33.5); width (N-3), 19-25mm (x22.0) and thickness (N-5), 4-5mm (x4.4).

The two side-notched points are incomplete. One, of Kettle Point chert, is missing approximately half of the blade (12 i); the other, of Onondaga chert, is broken closer to the shoulder (12 j). Both feature well-developed side notches with barbless shoulders and slightly convex basal margins, and in both cases the distal breaks consist of hinge fractures. The Kettle Point specimen is also missing one tang and shoulder: the latter features secondary retouch subsequent to breakage. It is possible that the Onondaga chert specimen is pre-Iroquoian: it is somewhat larger than the other side-notched point and exhibits a ground basal margin, a characteristic not usually associated with Iroquoian points.

The single corner-notched point (Figure 12 h) is complete but for a missing tang. It has slightly convex blade edges and a concave basal margin. Haft element modification has resulted in a short, straight-edged expanding stem. This point, of Onondaga chert, has a length, shoulder width and thickness of 34mm, 19mm and 5mm, respectively.

The two projectile point rejects are quite similar. Both are of indeterminate (burnt) chert and are triangular in shape, with convex blade margins. Sharply-hinged flake scars and nubbins of chert on the faces of both specimens attest to the knapper's unsuccessful attempts to reduce these preforms to the desired thinness. The length, width and thickness of the two are 40mm, 24mm and 8mm; and 39mm, 22mm and 7mm, respectively. One specimen features a straight, obliquely-oriented basal margin (12 f), the other a concave basal margin and an off-centre tip (12 g). The tip fragment is of indeterminate chert.

Pre-Iroquoian Bifaces

Five projectile points or bifaces recovered are pre-Iroquoian. All but one are complete and all more probably represent Iroquoian curios than pre-Iroquoian in-situ components. One specimen is side-notched (Figure 12 k). It has well-developed notches with somewhat rounded shoulders and convex blade and basal margins, with a length, width and thickness of 45mm, 23mm and 8mm, respectively.

Two other specimens are corner-notched. The smaller of the two is an example of the Late Archaic Crawford Knoll type (KEWA 1980:3, Figure 1). It has well-developed, barbed shoulders, with convex blade and basal edges: the basal margin is ground. The larger specimen (Figure 12 m) also features barbed shoulders, with straight to slightly convex blade edges and a convex basal edge. The length, width and thickness of each of the above are 34mm, 24mm and 7mm, and 49mm, 30mm and 7mm, respectively.

One specimen recovered represents a Late Archaic or Early Woodland cache blade (Figure 12 n). This artifact, of Onondaga chert, has slightly convex lateral and basal margins and a length, width and thickness of 58mm, 24mm, and 7mm, respectively. At some point in prehistory it was broken, and the two halves were found one meter apart. Interestingly, retouch had been applied to the juncture of one blade edge and the fractured margin of the distal half sometime after breakage.

The last specimen to be considered here is a fragment of a well made Onondaga chert biface (Figure 12 o). The specimen has been burnt and portions have sloughed off, including the base, most of one lateral edge and part of one face. What remains suggests a pentagonal form, and it is tempting to interpret this piece as a cremated or ritually killed Paleo-Indian projectile point of the recently-defined Crowfield type (KEWA 1984:5, 5). However, too little remains for a positive identification. This piece was excavated toward the south end of the site and a concerted effort to recover missing portions was made by expanding the excavations vertically and horizontally. All debitage from this area was similarly examined for relevant pieces. No trace of the missing pieces or of an associated feature were found, nor was any of the debitage from this area burnt or of non-local materials often used by Paleo-Indian knappers.

Drills

The three drills are all of Kettle Point chert. The only one with extensive deliberate modification is a long, thick flake with bifacial lateral retouch largely confined to the distal end (Figure 13 a). A second specimen is an irregular flake with a lateral point that has been accentuated by unifacial retouch. The third specimen is a thick flake with modification confined to use wear at one acute distal-lateral juncture. The respective length, width and thickness of each of the above are as follows: 34mm, 13mm, and 5mm; 28mm, 24mm, and 6mm; and 49mm, 39mm, and 12mm.

Strike-a-Light

The single strike-a-light from the Magrath site consists of the basal portion of a relatively thick biface of burnt Onondaga chert (Figure 13 b). The biface evidently broke prior to its inferred use as a strike-a-light, as the battered syndrome indicative of the latter use continues from the convex margin of the biface onto the fractured edge. This artifact has a length, width and thickness of 29mm, 16mm, and 6mm, respectively.

Bifaces

Eleven bifaces were recovered in addition to the previously described bifacially retouched artifacts. Only three are complete. The fragments probably include parts of finished tools broken in manufacture as well as portions of preforms.

One of the complete bifaces represents a finished tool (Figure 13 c). This artifact is of Kettle Point chert and features asymmetrically-convex blade edges and a narrow base. The more convex of the two edges is plano-convex in cross-section, the result of bevelling by secondary marginal retouch; the opposite edge is biconvex in cross-section. The nature of the edges suggest that this tool functioned as a combination knife and side scraper. The length, width and thickness are 44mm, 21mm and 5mm, respectively.

The other two complete bifaces represents preforms. The first (Figure 13 d) is ovoid in shape and slightly plano-convex in cross-section. The second (Figure 13 e) is trianguloid in shape, somewhat cruder, and exhibits unsuccessful attempts to remove a nubbin of chert on one face. This specimen is probably a reject. Both are of indeterminate chert. The length, width and thickness are 55mm, 43mm and 12mm, and 39mm, 32mm and 11mm, respectively.

Other probable preforms are represented by two fragments of larger bifaces. One is a roughly-flaked tip with complete bifacial retouch, the other is an incompletely retouched blade fragment that retains areas of nodular cortex. These are of indeterminate and Kettle Point chert, respectively.

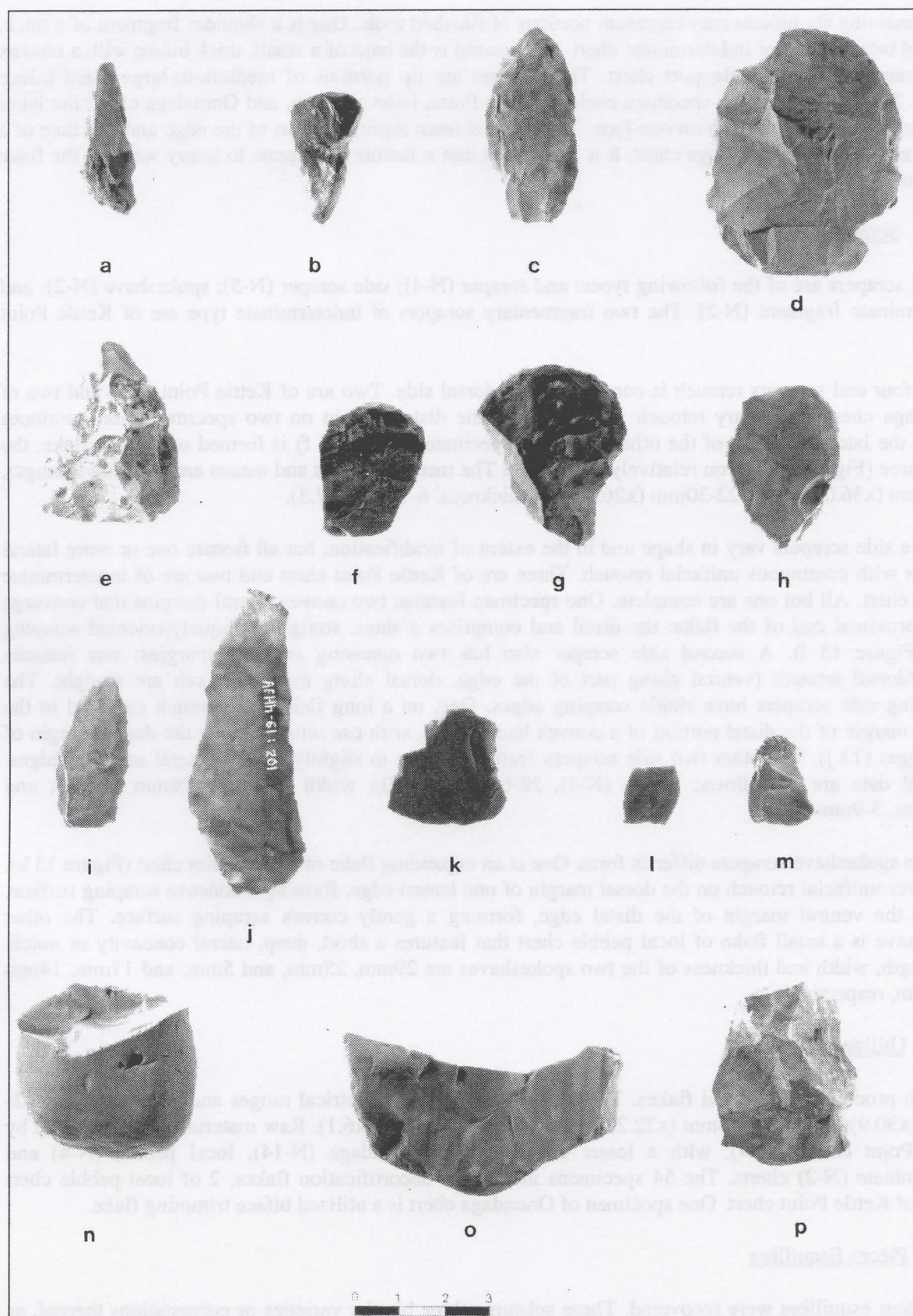


Figure 13 Magrath Site: Assorted Chipped Stone Artifacts and Cores

The remaining six bifaces may represent portions of finished tools. One is a shoulder fragment of a thick, notched biface blade of indeterminate chert. The second is the base of a small, thick biface with a convex basal margin, and is of Bayport chert. Three others are tip portions of medium-to-large sized biface blades. These comprise one specimen each of Kettle Point, indeterminate, and Onondaga chert, the latter featuring incomplete retouch on one face. The last specimen represents part of the edge and one face of a biface and is also of Onondaga chert. It is unusual in that it features moderate to heavy wear on the flake ridges of the extant face.

Scrapers

The 13 scrapers are of the following types: end scraper (N-4); side scraper (N-5); spokeshave (N-2); and indeterminate fragment (N-2). The two fragmentary scrapers of indeterminate type are of Kettle Point chert.

On all four end scrapers retouch is confined to the dorsal side. Two are of Kettle Point chert and two of Onondaga chert. Secondary retouch is confined to the distal margin on two specimens and continues around the lateral margins of the other two. One specimen (Figure 13 f) is formed on a thick flake, the other three (Figure 13 g-h) on relatively thin flakes. The metrical ranges and means are as follows: length, 32-41mm (x36.0); width, 22-30mm (x26.0); and thickness, 6-10mm (x7.3).

The five side scrapers vary in shape and in the extent of modification, but all feature one or more lateral margins with continuous unifacial retouch. Three are of Kettle Point chert and two are of indeterminate (burnt) chert. All but one are complete. One specimen features two convex lateral margins that converge at the proximal end of the flake: the distal end comprises a short, straight, obliquely-oriented scraping edge (Figure 13 i). A second side scraper also has two opposing scraping margins: one features ventral/dorsal retouch (ventral along part of the edge, dorsal along the rest); both are straight. The remaining side scrapers have single scraping edges. One, on a long flake, has retouch confined to the ventral margin of the distal portion of a convex lateral edge, with use retouch along the dorsal margin of both edges (13 j). The other two side scrapers feature straight to slightly convex lateral scraping edges. Metrical data are as follows: length (N-4), 29-66mm (x40.0); width (N-5), 16-26mm (x20.4); and thickness, 3-9mm (x5.8).

The two spokeshave scrapers differ in form. One is an expanding flake of Kettle Point chert (Figure 13 k). It features unifacial retouch on the dorsal margin of one lateral edge, forming a concave scraping surface, and on the ventral margin of the distal edge, forming a gently convex scraping surface. The other spokeshave is a small flake of local pebble chert that features a short, deep, lateral concavity or notch. The length, width and thickness of the two spokeshaves are 29mm, 25mm, and 5mm; and 17mm, 14mm and 4mm, respectively.

Utilized Flakes

Magrath produced 54 utilized flakes. These have the following metrical ranges and means: length, 12-60mm (x30.9); width, 11-46mm (x22.2); and thickness, 2-14mm (x6.1). Raw materials are dominated by Kettle Point chert (N-34), with a lesser occurrence of Onondaga (N-14), local pebble (N-4) and indeterminate (N-2) cherts. The 54 specimens include 14 decortification flakes, 2 of local pebble chert and 12 of Kettle Point chert. One specimen of Onondaga chert is a utilized biface trimming flake.

Pièces Esquillées

Five pièces esquillées were recovered. These subsume three bipolar varieties or permutations thereof, as follows: opposing ridge (N-3) (Figure 13 l); opposing ridge/opposing ridge (N-1); and ridge-area (N-1)

(Figure 13 m). The dual axis specimen is of indeterminate (burnt) chert, one of the opposing ridge specimens is of Onondaga chert, and the remaining three pieces esquillees are of Kettle Point chert. The three opposing ridge variety specimens are all formed on flakes; the other two on irregular or shatter fragments. Metrical data for the opposing ridge pieces esquillees are as follows: length, 14-27mm (x18.7); width, 12-24mm (x16.0); and thickness, 3-5mm (x4.0). The length, width and thickness for the ridge-area and dual axis specimens are 20mm, 15mm and 13mm; and 32mm, 28mm, and 10mm, respectively.

The small size of the bipolar pieces esquillees forms one criteria that serves to separate these tools from the bipolar cores (see below), and the absence of scars pertaining to the detachment of useful flakes confirms the separation.

Cores

The relatively small core sample comprises 23 specimens. Most common are random cores, (N-13), followed by cores of the bipolar type (N-8) and specimens of indeterminate type (N-2). Bipolar cores subsume four varieties including two fragmentary examples that retain only one zone of percussion consisting of a ridge, and one complete specimen that was flaked on two axes. The correlation of core type and variety with raw material, summarized in Table 6, demonstrates the predominance of Kettle Point chert cores (N-16); the three other materials represented are local pebble cherts (N-5), Onondaga chert (N-1) and indeterminate chert (N-1). The majority (N-17) retain portions of their original nodular cortex: this is evident on 14 of the 16 Kettle Point chert cores (Figure 13 n), on the lone core of Onondaga chert, and on two of the five cores of local pebble chert. The two cores of indeterminate type actually comprise flat nodules of Kettle Point chert split lengthwise (13 o). A ridge-area core that lacks cortex is also illustrated (13 p). Metrical data (Table 10) indicate that cores of the random type tend to be thinner than those of the bipolar varieties.

Table 6: Magrath Site; Correlation of Core Type, Variety and Raw Material Chert Type

Core Type	Core Variety	Chert Type				Total
		Onondaga	Kettle Point	Local Pebble	Indeterminate	
Random		1	8	3	1	13
Bipolar	Opposing Ridge		1			1
	Opposing Ridge/Opposing Ridge		1			1
	Ridge-Area		2	2		4
	Ridge?		2			2
Indeterminate-			2			2
Total		1	16	5	1	23

Debitage

Chipped lithic debitage is the most abundant category at Magrath: 2,982 pieces with a combined weight of 2,930gm were recovered. As previously stated, only 49.3% of the sample by number (N-1470) have been examined (Table 8). The majority (N-1098, 74.7%) lack cortical surfaces; a further 364 (24.8%) comprise primary and secondary decortification flakes; and a small number (N-8, 0.5%) are biface trimming flakes. The latter each feature a segment of the original biface edge and a prominent lip with a

diffuse bulb of percussion characteristic of their type (Morlan 1973). These pertain to earlier stages of biface manufacture and/or to later resharpening of blunt bifacial tools. One other biface trimming flake is represented in the utilized flakes. The low incidence of these specimens belies an abundance of fine retouch or pressure flakes that also pertain to biface manufacturing. The high incidence of specimens with cortex among the Kettle Point debitage (N-354, 24%) reflects the relatively small size of the Kettle Point chert nodules being used, and supports the evidence of the cores that unworked nodules were being brought to the site and processed there.

Table 7 Magrath Site; Cores, Metrical Data

Core Type	Core Variety	N	Length		Width		Thickness	
			Range	Mean	Range	Mean	Range	Mean
Random		12	30-89	47.4	17-45	30.9	13-34	15.8
Bipolar	Opposing Ridge	1	(46)	46	(26)	26	(16)	16
	Opposing Ridge/ Opposing Ridge	1	(44)	44	(35)	35	(18)	18
	Ridge-Area	4	40-54	47.3	28-43	33	22-28	32.3

Only one specimen of patently exotic raw material is present in the Magrath debitage sample, and this has been excluded from the above consideration as it is probably not Iroquoian. The piece in question is a small chip of Flint Ridge chalcedony from Ohio. It weighs 0.1gm. Little or no use was made of this material by Ontario Iroquoian peoples, and it is usually associated in southwestern Ontario with such Middle Woodland artifacts as projectile points of the Vanport type (KEWA 1980:1). As such, the present example is more likely to pertain to a pre-Iroquoian than an Iroquoian artifact, perhaps retained by the Iroquoian occupants as a curio and somehow damaged.

Table 8: Magrath Site: Chipping Debitage; Correlation of Chert Type and Category by Number of Pieces

Chert Type	Category			Total	
	Decortification Flake	Non-Decortification Flake-	Biface Trimming Flake	N	%
Kettle Point	354	1096	6	1456	99.1
Onondaga		1	2	3	0.2
Local Pebble	6			6	0.4
Indeterminate	4	1		5	0.3
Total	364	1098	8	1470	100

* Sample comprises 49.3% of total recovered

Ground and Rough Stone

Specimens of ground and rough stone comprise a small proportion of the cultural remains from the Magrath site: 58 pieces were found, of which only 22 are unequivocal tool or tool fragments. These two artifact classes are lumped together for consideration in this section and in the comparable sections of the Willcock and Pond Mills site analyses. The ground stone class consists of specimens of non-siliceous materials that were deliberately ground as part of the manufacturing process: the rough stone artifact class subsumes specimens of similar materials that feature minimal modification and/or modification resulting

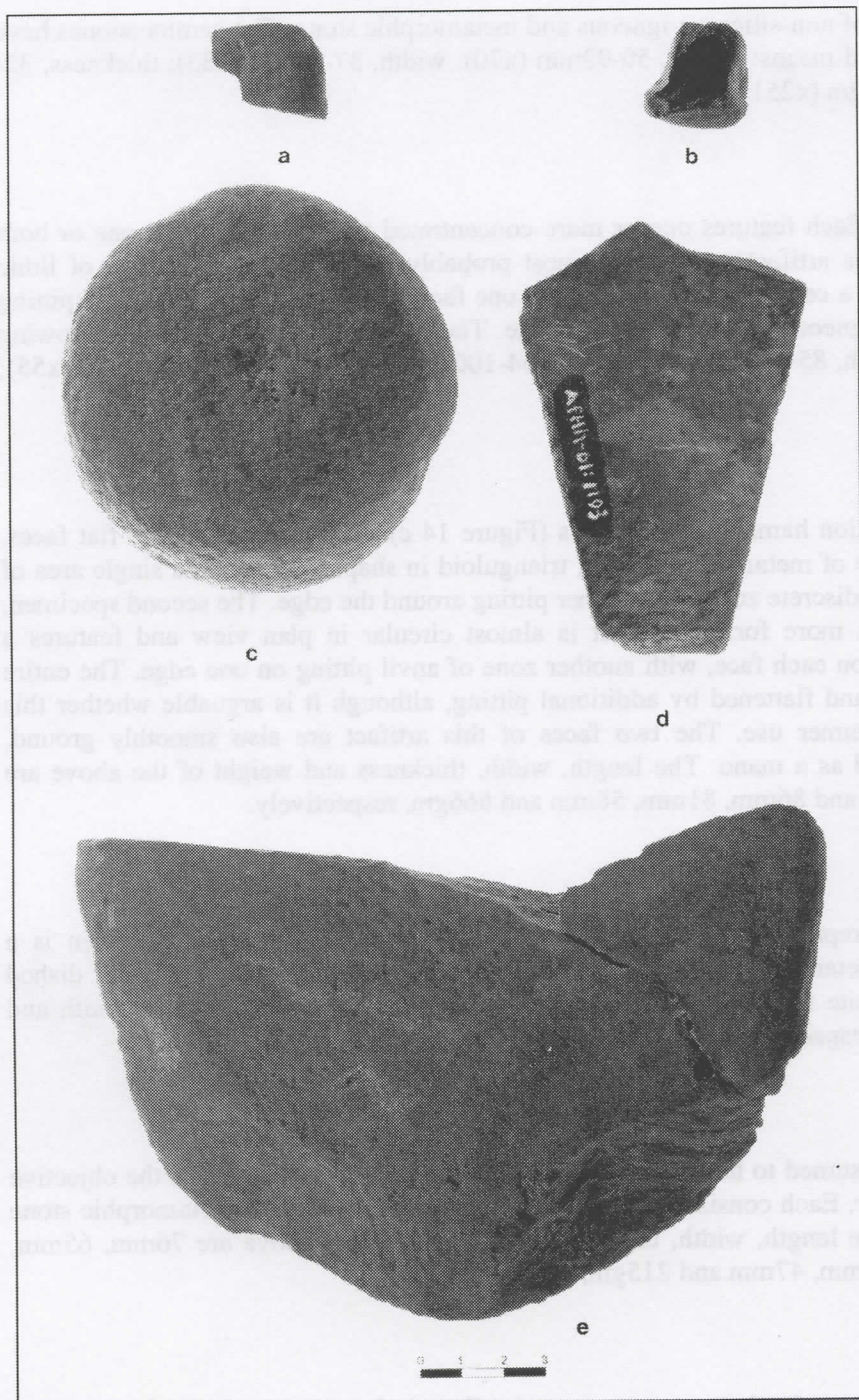


Figure 14 Magrath Site: Ground and Rough Stone Artifacts

suggests that they represent part of a stone pipe preform broken in manufacture.

Hammerstones

Eight hammerstones are present in the collection. Each exhibits one or more zones of generalized pitting pertaining to the use of the artifact as the objective piece, most probably in chipped lithic reduction. The specimens are all cobbles and vary in shape from ovoid to irregular. One is of quartzite, one is of

from use alone.

Only two of the 22 unequivocal tools of the combined classes pertain to the ground stone class. The general impression derived from the collection as a whole is that a few specimens consisting of more formal artifacts may have been brought to the site in finished form but that the majority represents the casual use of materials more readily at hand. As such, there are no ground or rough stone industries to speak of at Magrath.

Celt

A single fragment of a finished celt of amphibolite was recovered (Figure 14 a). It consists of a portion of the bit edge and one part of an adjacent face, and probably represents an artifact broken in use.

Ground Steatite

Two fragments of an unfinished artifact of reddish-brown steatite were recovered. What remains of the original exterior face of each is highly polished, although the surfaces are somewhat irregularly faceted and retain parallel striae oriented at different angles resulting from grinding. The shape of the larger of the two fragments (Figure 14 b)

sandstone, and the remainder is of non-siliceous igneous and metamorphic stone. The hammerstones have the following metrical ranges and means: length, 50-92mm (x70); width, 37-70mm (x53); thickness, 32-61mm (x45); and weight 80-519gm (x251).

Anvil Stones

Three anvil stones were found. Each features one or more concentrated zones of pitting on one or both faces pertaining to the use of the artifact as an anvil, most probably in the bipolar technique of lithic reduction. A small specimen has a central zone of pitting on one face; two larger specimens have pitting on both faces. All are of hard igneous or metamorphic stone. The combined sample has the following metrical ranges and means: length, 85-136mm (x111); width, 54-100mm (x78); thickness, 52-60mm (x55); and weight, 315-1050gm (x798).

Hammer-Anvil Stones

Two artifacts represent combination hammer-anvil stones (Figure 14 c). Both have relatively flat faces. One specimen is a natural cobble of metamorphic stone, trianguloid in shape. It features a single area of anvil pitting on one face and two discrete zones of hammer pitting around the edge. The second specimen, also of metamorphic stone, is a more formal tool. It is almost circular in plan view and features a centralized zone of anvil pitting on each face, with another zone of anvil pitting on one edge. The entire circumference has been shaped and flattened by additional pitting, although it is arguable whether this was the result of design or hammer use. The two faces of this artifact are also smoothly ground, suggesting that it also functioned as a mano. The length, width, thickness and weight of the above are 78mm, 75mm, 40mm and 386gm, and 86mm, 81mm, 58mm and 666gm, respectively.

Metate-Anvil

A single artifact (Figure 14 e) represents a combination metate and anvil stone: this specimen is a fragment of a larger artifact of metamorphic stone. One face, pertaining to the metate, is slightly dishd and smoothly ground. The opposite face is covered by shallow pitting. The specimen has a width and thickness of 158mm and 38mm, respectively.

Manos

The two manos recovered are presumed to have been used in combination with a metate as the objective piece in grinding vegetable matter. Each consists of a somewhat flat, ovoid cobble of metamorphic stone with a smoothly ground face. The length, width, thickness and weight of the above are 76mm, 65mm, 31mm and 406gm, and 86mm, 72mm, 47mm and 215gm, respectively.

Abraders

One complete and two fragmentary abraders were recovered: all are of sandstone. Each features one smoothly-ground face. The complete specimen (Figure 14 d) has a length, width, thickness and weight of 97mm, 64mm, 15mm and 182gm, respectively.

Miscellaneous

This category subsumes 36 specimens that cannot readily be assigned to the standard rough stone categories. One artifact may be a netsinker. This specimen is a large slab of sandstone and features a single notch on one edge. One face of the piece consists of the fossilized ripples of the sea bottom where it was originally formed. The length, width, thickness and weight are 220mm, 155mm, 30mm and

1,479gm, respectively.

Two specimens consist of cobbles with slightly smooth surfaces. These may have functioned briefly as manos. The respective length, width, thickness and weight of the two are 61mm, 34mm, 22mm and 64gm, and 82mm, 53mm, 49mm, and 332gm. Two other specimens may pertain to celt manufacture. Both are shards of amphibolite. An additional specimen is a cobble spall of Huronian slate. The remaining 30 specimens are fire-cracked cobble fragments. These may include portions of rough stone tools used as pot boilers.

Fire-Cracked Rock

All fire-cracked rock was collected for later laboratory washing, examination and weighing: a total of 39,100 gms were found.

Faunal Remains

Faunal remains were rare at Magrath: 510 pieces with a total weight of 312 gm were recovered. Virtually all of the material is comprised of bone. The sample subsumes 358 pieces (93 gm) of calcined material and 152 pieces (219 gm) of uncalcined material. These have not yet been analyzed. However, two uncalcined teeth were examined and were tentatively identified as the incisors of medium-to-large sized cervids, deer or more likely elk (D. Pihl, personal communication). On each the root has dissolved away.

It is possible if not probable that most of the uncalcined remains pertain to non-prehistoric domestic and/or naturally-occurring species. This hypothesis is supported by the evidence of calcined versus uncalcined distributions and by soil analyses (see below). The relative distributions show that calcined bone fragments correlate reasonably well with the areas of denser prehistoric occupation and/or refuse, and are largely confined to the northern half of the site, whereas uncalcined fragments are more randomly scattered over the entire knoll, with indications of concentrations around the eastern slope where woodchuck burrows were common. As soil analyses indicate a more-or-less uniformly acidic environment for the entire knoll, differential soil acidity could not be responsible for the differences in these distributions.

Three long bone fragments from medium-to-large sized mammals may have been deliberately modified. All are burnt and have an unnaturally high polish on the exteriors. One specimen also features butchering marks.

Floral Remains

Neither charcoal nor carbonized plant remains were abundant at Magrath. Charcoal comprises a total weight of 511 gm; carbonized plant remains a mere 15 gm. Floral remains have not been analyzed but it may be stated that cultigens are represented by several fragments. In addition to the above a total of 748 gm of float residue were recovered. These may contain microscopic remains.

Recent Remains

A total of 162 pieces of recent material were found. Although these have not been analyzed, all appear to date to the twentieth century and represent an occasional, non-residential use of or presence on the knoll and vicinity. Included among the above are shards of glass, fence staples, an iron wood-splitting wedge, a partly-crushed brick of yellow clay and a 1973 Canadian five cent piece. The brick may have served as a prop for a heavy machine such as a donkey engine: certainly no other evidence pertaining to architecture was recovered.

Soil Analysis

Soil samples were retained for a determination of pH values from the topsoil surrounding 57 five-meter-grid posts across the knoll, and from the fill of 23 features. In order to ensure representative results, duplicate tests were run for each sample. The results indicate that the topsoil forms a mildly acid to acidic environment, with a pH range and mean of 4.83 - 6.76 and 5.85, respectively. Feature fill was very acidic to mildly acidic, with a pH range and mean of 3.83 - 6.61, respectively. The ranges and means for the combined soils are 3.83-6.6 and 5.64, respectively.

Discussion and Interpretations

Considering the extent of the excavations, the Magrath site produced a small sample of diagnostic material, yet this result was not unexpected. The initial 10-meter-interval test pits through which the site was discovered in 1982 were almost all sterile, and even those that were productive produced a total of no more than half a dozen flakes and a few pieces of bone, with no ceramics whatsoever (personal observation). The more intensive 3-meter-interval test pits and the three trenches that followed in 1982 produced more material, sufficient to demonstrate that the site was Glen Meyer and to suggest that it was not a village. It fell to the 1983 investigations to determine just what kind of site it was, and whether burials were present.

In some ways, the 1983 excavations were more remarkable for what they failed to discover than for what was found. In terms of settlement patterns, it is evident that more rodents than people ever occupied the site: there was no evidence of a longhouse, no post moulds and relatively few features. While the light scatter of prehistoric remains indicates some use of the entire third of an acre surface of the knoll, most remains and all features were concentrated in an area half that size at the northern end of the knoll.

The length and season of the occupation may be roughly inferred from both positive and negative evidence. The lack of a shelter is perhaps the best indicator that Magrath was occupied during the warmer months, an hypothesis that is supported by several other types of data. Firstly, only one hearth was found, and it was both small and somewhat faint, indicating that it pertained to cooking rather than heating. Concurrently, fire-cracked rock indicative of cooking is comparatively rare at Magrath, and ash is virtually absent. The relatively small quantity of refuse and small number of features suggest a comparatively brief occupation, and this is supported in part by the nature of the features themselves. Most are discrete, indicating possible contemporaneity, and of the three sets of pits that are intersecting none is distinguishable by fill, indicating that each may pertain to a single depositional event. Similarly, none of the features is truly stratified, indicating short term use. Precisely what function(s) the pits served is unknown: it is difficult to imagine a need for either storage or refuse disposal pits if the occupation was as brief as it appears to have been. Certainly, nothing substantial has survived in the pits in terms of refuse to suggest that storage was their function, although the very acidic environment demonstrated by soil testing could account for the disappearance of organic material such as bone. However, it is evident from the refuse-filled depressions and general scatter of cultural material that refuse disposal was largely a casual matter for the occupants at Magrath.

The relative quantity of refuse is an indication of population size as well as the length of occupation. Given this, we may surmise that the site was probably occupied for only a short period or periods by a small group of people during the warmer part of the year. We will probably never know if Magrath was occupied for a few days each year over a period of several years or for a slightly more prolonged period in a single year, although the general clustering of features and low frequency of intersecting pits could be invoked as support for an interpretation of the occupation as a one time event.

In order to address the questions of population composition and site function, it is necessary to consider the nature of the cultural remains. As detailed in the preceding analyses, they are largely dominated by chipped lithics. Indeed, chipped stone comprises the only technological industry that can be inferred directly from the material remains. Despite some use of local pebble cherts and of Onondaga chert nodules from the north shore of Lake Erie, virtually all of the raw material is comprised of Kettle Point chert from Lake Huron. Whether this was obtained directly or through intermediaries, it is obvious that the people of Magrath were engaged in the lithic reduction of Kettle Point chert cores as a major activity. The range of formal tools and preforms and the nature of the debitage also demonstrate that the knappers were manufacturing a variety of tools, not merely dressing cores for transportation and further processing elsewhere. At the same time, the formal and informal tools indicate that lithic reduction was part of a more general industry that involved the manufacture, maintenance and use of equipment for hunting, skinning and butchering. As such, Magrath would appear to have functioned as a base camp for hunting and processing game. Few faunal remains have survived to support this interpretation, although the mildly acidic to very acidic environment would account for this lack of preservation.

It may be assumed that the hunters and knappers were male, but this does not preclude a female presence at the site, involved in the tasks of skinning and dressing hides, butchering the game and helping to transport the meat. Women may also have been responsible for those aspects of the chipped lithic industry that involved bipolar reduction (Hayden 1980), a technique represented by some cores and by anvil stones in the assemblage. The grinding of vegetable matter, indicated by the manos and in part by the one metate-anvil, would also suggest that women were present at Magrath. Finally, the presence in the artifact sample of sherds from two juvenile vessels indicates that at least one child accompanied the adults.

The Glen Meyer sites of the Caradoc sand plain represent the most appropriate context in which to interpret the Magrath site. Several years of extensive survey and excavation by Williamson (1981, 1982, 1983, 1985) have documented what is believed to be a single community developing through time and have resulted in the best defined regional settlement and subsistence pattern known for Glen Meyer. Magrath and the other Byron area sites are located only a few kilometers away and occupy what is essentially an eastern extension of the Caradoc sand plain. As such, the Caradoc sites are geographically the closest Glen Meyer cluster to Magrath and appear to be roughly contemporary with the Byron sites, if not actually related.

The Caradoc research has identified a variety of site types in addition to villages, with non-village sites all pertaining to the intensive exploitation of seasonally available natural resources. Excavations on hamlets of the so-called "Millstream Cluster" (Williamson 1983) have demonstrated a range of activities including summer to fall or late fall to winter nut harvesting and deer processing (Kelly, Yaworski and Berkmontel sites) and spring fishing (Yaworski site). One notable aspect of these sites is that all are located in an historic oak stand, evidently to take advantage of nut harvesting as a storable food resource and of deer that would have been attracted to the forest to feed on acorns, their favourite fall food (Williamson 1983). The presence of men, women and children has been documented for all of the Millcreek Cluster sites, a fact that Williamson (1982:57-59) views as symptomatic of the still less-than-dominant role of horticulture and a correspondingly less strict division of labour, both characteristic of the transitional stage of settlement and subsistence patterns during the Glen Meyer period.

The Magrath site is less substantial than the Millcreek Cluster hamlets, all of which have at least one longhouse and appear to have been repeatedly occupied. Nevertheless, Magrath also consisted of a mixed population engaged in non-horticultural activities, and doubtless pertains to a similar settlement and subsistence system. In this regard it may be significant that Magrath was also situated in an historic oak stand, a location that would have been advantageous for the hypothesized function of hunting and processing game, especially deer.

It may be seen as a mark of the special function nature of the Magrath site that one of the industries most commonly associated with prehistoric Iroquoian women does not appear to be represented here at all: pottery manufacture. As detailed in the analysis, only five lumps of clay with an aggregate weight of 18 gm were recovered, and these are as likely to pertain to the manufacture of ceramic pipes or even juvenile vessels. One could probably expect a greater abundance of waste clay if any or many of the minimum of 21 adult vessels had been made on site. Thus, it would appear that most or all of the adult vessels were brought to the site. An interesting side-light to this issue is that most of each vessel also appears to have left the site when the people moved on: despite the minimum vessel count of 21, body sherds are not well represented at Magrath, and at least 25% of the body sherd sample actually pertains to a single vessel. Clearly the upper portions of vessels were suffering damage in use and pots with chipped rims and necks were still considered useful and were not discarded. The writer has seen an even more radical example of this form of conservation among the Zande of the southern Sudan in Africa: broken sections of large pots no bigger than a double handful being used to store seeds. The fact that large sections of Iroquoian vessels are rarely found even on village sites may argue that this particular form of conservation was the rule on Iroquoian habitation sites of all types, and it could certainly be expected at a site such as Magrath, where the people did not have ready replacements for damaged pots.

Reference has already been made to the matters of activities and refuse disposal. In order to highlight potential refuse disposal and activity areas the distributions of body sherds, chipping detritus and fire-cracked rock were plotted and are illustrated here (Figures 15-18).

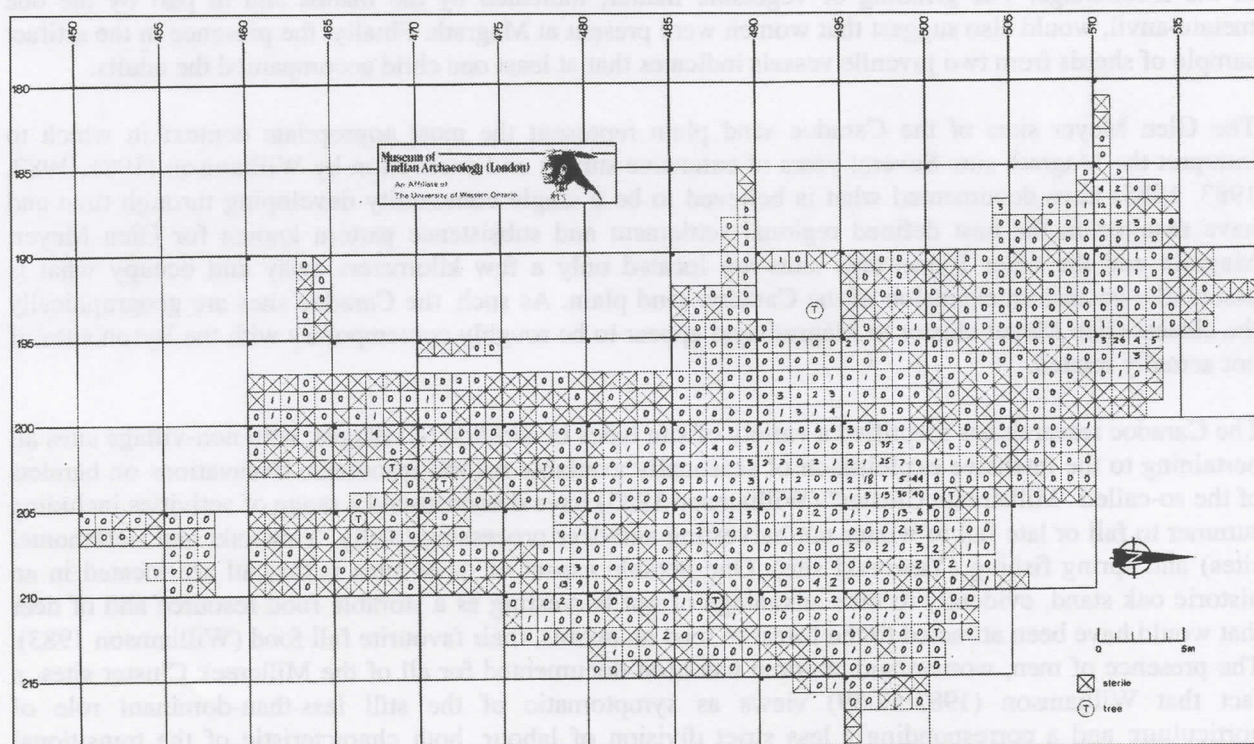


Figure 15 The Magrath Site: Distribution of Body Sherds by Number

Material from refuse-filled depressions are included as these features, being shallow, may pertain at least in part to both refuse disposal and specific activity areas; all other features are excluded. The results indicate a reasonably light and uniform scatter for the southern half of the site, with the exception of fire-cracked rock that comprises two concentrated clusters near the south end of the knoll (Figure 18). As mentioned previously, most cultural remains were recovered from the north half of the site. A relatively

large quantity of the various categories were derived from the area immediately west and northwest of the locus of the features, and these could be described as sheet middens, albeit far from rich ones. The only true activity area that may be defined on the basis of the present study is a chipping locus situated near the centre of the site. It is located several meters to the south of the main cluster of features, in Square 480-200 (Figures 16, 17), and comprises a small area of a few square meters. Included are two adjacent subsquares that produced 49% of the sites' total debitage sample by number (N-1470), or 44% by weight (1291 gm). Three cores were recovered from this concentration.

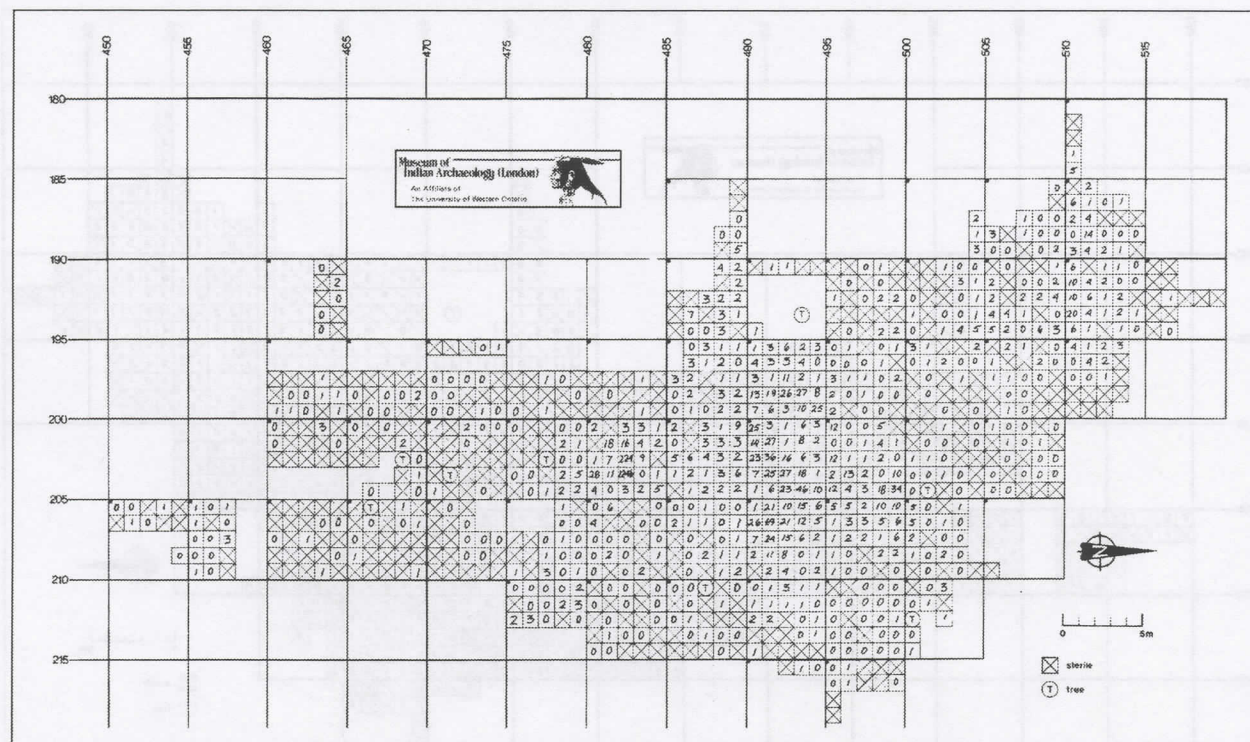


Figure 16 The Magrath Site: Distribution of Debitage by Number

Ceramics constitute the firmest basis for establishing the cultural affiliation and chronological placement of the Magrath site. The main features of the Magrath ceramic assemblage may be summarized as follows: the absence or incipience of vessel collar development; a high incidence of exterior rim decoration with similar frequencies in the use of the cord-wrapped stick impressed and linear stamped techniques; the minor use of incising as a secondary exterior technique; a high incidence of lip decoration with comparable frequencies of cord-wrapped stick impression, linear stamping and incising; a high frequency of complex interior rim decoration executed by cord-wrapped stick and linear stamping; and the absence of exterior punctates, together with the presence of interior punctates forming exterior bosses.

Ceramic seriation is a less useful dating technique for Glen Meyer sites than for later time periods, partly because there is considerable variation in the format used by different analysts in presenting their data and partly because the number of analyzed collections is limited. The task of comparative dating is further complicated by regional variation between roughly contemporary sites (e.g. Noble 1975b:46).

Similarities have been noted between the Magrath ceramics and those from two dated Glen Meyer components: the Boisclair site, located only 300 meters away; and the Calvert site, situated near Dorchester. Any use of these sites as the basis for a comparative dating of Magrath, however, must await analyses of the Boisclair and Calvert collections. The Glen Meyer components of the Caradoc sand plain

provide a more useful basis for cross-dating. Three of the Caradoc components have been radiocarbon dated: the Yaworski site has dates of 1060 + 80 A.D. (1-12,059) and 1120 + 80 A.D. (1-12,060) that have been statistically averaged to 1090 + 55 and then calibrated to 1150 + 55 (Timmins 1984:75). The Kelly site yielded dates of 1100 + 80 A.D. (1-12,061) and 1160 + 80 (1-11,474) that have been averaged to 1130 + 55 and then calibrated to 1205 + 35 (Ibid: 74-75). The Roeland site also has two dates: 1200 + 80 A.D. (1-12,774) and 1250 + 80 A.D. (1-12,773), similarly averaged to 1225 + 55 and calibrated to 1280 + 730 (Ibid:75).

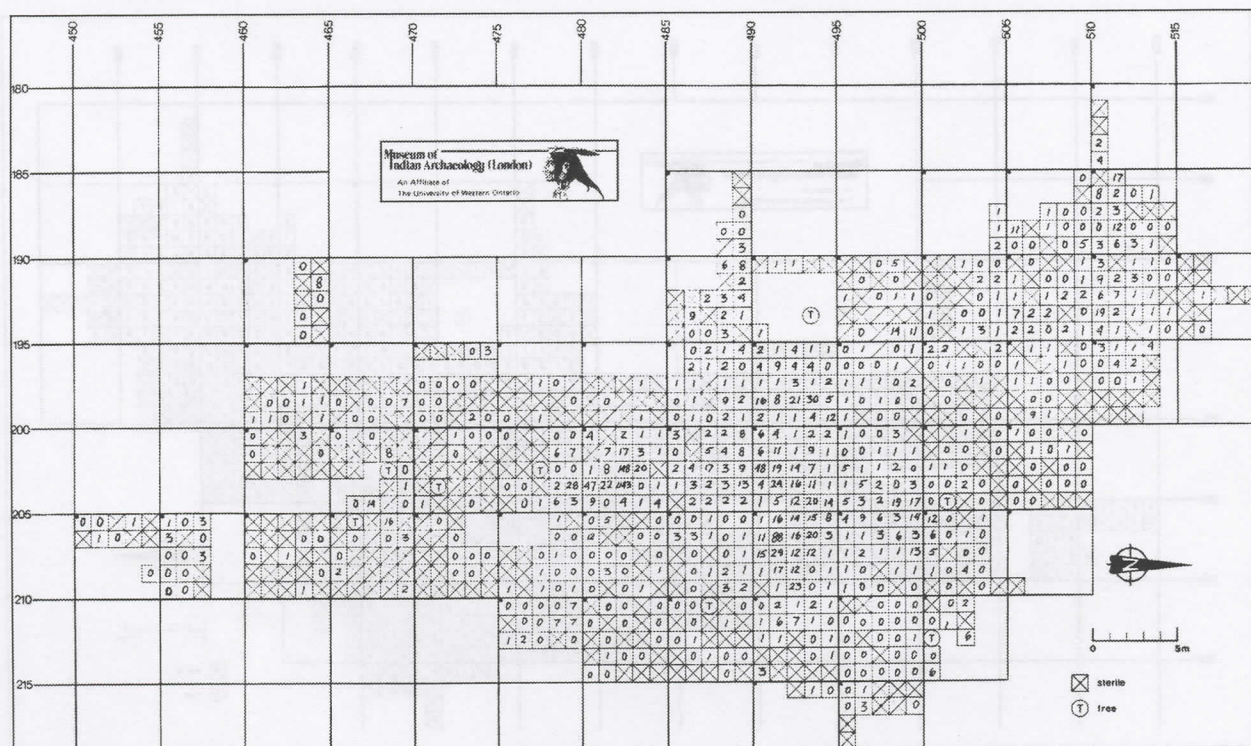


Figure 17 The Magrath Site: Distribution of Debitage by Weight (gm)

Differences in the motif categories employed by this analyst and Williamson do not permit direct comparisons of most motifs between Magrath and the Caradoc sites. Concurrently, there appear to be few strong ceramic trends evident between the Yaworski site (ca. 1150 A.D.), the Kelly site (ca. 1205 A.D.) and the Roeland site (ca. 1280 A.D.). An examination of the frequency of interior and lip decoration and technique and exterior rim technique (Williamson 1985:tables 30-33, 35) suggests that the most prominent trends are a steady decrease in cord-wrapped stick interior decoration, an increase followed by a decrease in lip decoration (including cord-wrapped stick) and the same trend in cord-wrapped stick as a exterior decorative technique. Magrath seriates somewhat poorly in the above respects, perhaps owing to the small sample size. Nevertheless, it is generally most like Kelly and least like Roelands. From this is a rough temporal placement of ca. 1150-1250 A.D. may be inferred for the Magrath occupation. This suggested date does not compare well with the two thermoluminescent dates for the Magrath site of 1310 + 130 and 1370 + 120: only the lower range of the earlier date would fall within the period indicated by seriation. Whatever the problem is with TL dating as applied in this project, it is a consistent one. The TL samples from the three C.O.E.D. components involved invariably yielded determinations of a century or more later than expected.

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